

AJ



PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification 5 : A01K 1/02, E04H 5/08</p>	<p>A1</p>	<p>(11) International Publication Number: WO 90/07872 (43) International Publication Date: 26 July 1990 (26.07.90)</p>
<p>(21) International Application Number: PCT/DK90/00023 (22) International Filing Date: 23 January 1990 (23.01.90) (30) Priority data: 0285/89 23 January 1989 (23.01.89) DK (71)(72) Applicant and Inventor: RASMUSSEN, Jan, Krøyer [DK/DK]; Ellebækvej 2, Ellested, DK-5853 Ørbæk (DK). (74) Agent: LARSEN & BIRKEHOLM A/S SKANDINAVISK PATENTBUREAU ; Skagensgade 64, P.O. Box 200, DK-2630 Taastrup (DK). (81) Designated States: AT, AT (European patent), AU, BB, BE (European patent), BF (OAPI patent), BG, BJ (OAPI patent), BR, CA, CF (OAPI patent), CG (OAPI patent), CH, CH (European patent), CM (OAPI patent), DE, DE (European patent), DK, DK (European patent), ES, ES (European patent), FI, FR (European patent), GA (OAPI patent), GB, GB (European patent), HU, IT (European patent), JP, KP, KR, LK, LU, LU (European patent), MC, MG, ML (OAPI patent), MR (OAPI patent), MW, NL, NL (European patent), NO, RO, SD, SE, SE (European patent), SN (OAPI patent), SU, TD (OAPI patent), TG (OAPI patent), US.</p>		<p>Published <i>With international search report.</i> <i>In English translation (filed in Danish).</i></p>
<p>(54) Title: A PIGPEN UNIT</p> <div data-bbox="422 1113 1250 1638"> </div> <p>(57) Abstract</p> <p>In order to be able to keep pigs in an expedient manner, this must be effected in such a way that the pigs are given living and growing conditions which correspond substantially to their natural behavior. According to the invention, for this purpose there can be used a pigpen unit comprising a piggery (1) and an enclosed yard (2), neither of which have a floor, and an external feeding place (3). These sections can be separated and assembled in such a manner that it is easy to move the pigpen unit for a crop rotation. In order to facilitate the feeding and the operation, the unit has a straight side wall (4, 12, 15) which faces out towards the road (25), and from which through a door (13) there is access into the yard (2) and through an opening (27) fodder can be introduced into a trough.</p>		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT Austria
AU Australia
BB Barbados
BE Belgium
BF Burkina Fasso
BG Bulgaria
BJ Benin
BR Brazil
CA Canada
CF Central African Republic
CG Congo
CH Switzerland
CM Cameroon
DE Germany, Federal Republic of
DK Denmark

ES Spain
FI Finland
FR France
GA Gabon
GB United Kingdom
HU Hungary
IT Italy
JP Japan
KP Democratic People's Republic
of Korea
KR Republic of Korea
LI Liechtenstein
LK Sri Lanka
LU Luxembourg
MC Monaco

MG Madagascar
ML Mali
MR Mauritania
MW Malawi
NL Netherlands
NO Norway
RO Romania
SD Sudan
SE Sweden
SN Senegal
SU Soviet Union
TD Chad
TG Togo
US United States of America

A PIGPEN UNIT

The invention relates to a pigpen unit for siting on a fenced-in field area, comprising a piggery with an access opening.

Pigpens are normally used as the only shelter for pigs which are to be held outdoors. However, such pens are not always sufficient to provide the pigs with the necessary protection against the weather, and especially during the winter they can give rise to the risk of sickness. Therefore, the pigs are taken into closed sties during the winter, with the practical problems which this involves.

Furthermore, there are disadvantages of a practical kind in connection with a single pigsty, such as the risk of the accumulation of manure in the piggery, since this is where the pigs prefer to spend their time, and problems with getting them enclosed without them getting excited and stressed.

From US PS no. 3,256,858 is known such a pigpen unit with openings under the shed roof and out in the yard. This unit does not provide sufficient protection against the weather, and it precludes the animals from having the run of the earth.

With suitable climatic conditions, the unit would appear to be suitable only for a sow with piglets, and it will not be suitable for the rearing of piglets for slaughtering.

Moreover, from US PS no. 2,638,820 there is known a

pigpen unit comprising an area confined in fields with a piggery and closed feeding yard associated herewith. However, since the unit cannot be operated from a carriage road, it is not rational to work with. To this must be added the fact that one lacks a closed yard in which the pigs which are to be transported for slaughtering can be collected. Instead, attempts have to be made, for example, to collect the pigs during the feeding.

It is the object of the invention to improve such known pigpen units, and this is achieved in that the piggery does not have a floor and in that the opening in the piggery faces out to a closed and possibly covered yard without floor in extension of the piggery, said yard being provided with a door out to the field, and with a feeding board with trough placed on the outside of the yard.

First and foremost, what is achieved hereby is a considerable improvement in the conditions for the pigs in the piggery, in that the yard will function as a wind-trap and hereby provide the possibility of maintaining the sufficient temperature inside the piggery. Moreover, the risk of sickness will be able to be reduced considerably, in that a covering, e.g. in the form of a tarpaulin over the yard, can keep this dry in wet weather, so that the pigs can remain effectively sheltered. This provides adequate security against sickness and opens possibilities for the pigs to be able to be kept outdoors the whole year.

Finally, the outside feeding provides security that

the pigs leave the piggery and the yard, at least during the feeding, which has many advantages, and particularly that they always completely consume the feed, and that after the feeding they will leave
5 the manure out on the field. In practice, this has proved to be sufficient to be able to keep the yard and the piggery almost completely free of manure.

As disclosed in claim 2, by allowing the piggery,
10 the yard and the feeding board to constitute a lengthwise unit with a straight side wall, it will be possible from the point of view of construction to utilize this to reduce the number of elements, so that only a few side pieces and end pieces are re-
15 quired to construct the unit.

As disclosed in claim 3, by providing the yard with an additional door and having an opening in to the feeding trough in the straight side wall, one will
20 be able to let the pigs in and out of the yard and feed them from one and the same side, which affords a rational pig-keeping operation.

As disclosed in claim 4, by being able to erect and
25 separate the individual units, it will be a simple matter to move the pigpen unit to another field area, whereby a rational utilization of the crop rotation is achieved.

30 Finally, as disclosed in claim 5, it is expedient to allow the straight side to face out to a road, in that this not only enables several pigpen units to be placed along the same road, but also enables the units to be moved over to the opposite side of the

road when changing area, without the need of further roadways.

The invention will now be described in more detail
5 with reference to the drawing.

Fig. 1 shows a perspective view of a pigpen unit according to the invention,

10 Fig. 2 shows a section of the piggery seen in the direction II-II in fig. 1,

Fig. 3 shows a section of the yard seen in the direction III-III in fig. 1,

15 Fig. 4 shows a section of the feeding board seen in the direction IV-IV in fig. 1, and

20 Fig. 5 shows a plan view of several pigyards and crop areas on each side of a common road.

In fig. 1 is shown an example of a preferred embodiment of a pigpen unit for siting on a field. The unit
25 includes a closed piggery 1 with an opening 10 in the one end 8.

The construction is seen clearly in the sectional drawing fig. 2. It comprises side walls 4 of plywood
30 sheets, e.g. 12 mm, on horizontally extending beams 5, and with insulated ceiling 6, also of plywood provided with insulation. There is no floor in the piggery. Finally, the roof is built up of rafters with a roof surface 7 which can be of aluminium sheet.

The opening 10 in the end 8 can be provided with a loosely-hanging cover plate 9, see also fig. 3, whereby the air change in the piggery can be reduced to suit requirements.

5

The whole of the piggery is constructed as a self-supporting unit so that it can be lifted, e.g. by means of a forklift truck, and moved to another site.

- 10 As shown in fig. 1, secured to the piggery 1 there is a yard 2 consisting of side walls 12 and an end wall 14, and without a floor.

- 15 In the sectional drawing fig. 3 it is seen that the side walls 12 and the end wall 14 are built up of an angle-iron frame with a vertical post for a hinged door 13. The wall area and the door area can be of 12 mm plywood.

- 20 Finally, a perpend 11 is secured to the gable of the end wall 8, said perpend extending over the yard and further out over the feeding board 3.

- 25 In fig. 1 it is also seen that the side walls 12 of the yard are coupled to the piggery 1 by means of a pair of brackets which, for example, can be dismantled and mounted by means of a bolt. The yard section 2 can thus be separated from the piggery 1, and the side walls 12 from the end wall 14, so that
30 the yard section can easily be folded together and moved. The feeding board is mounted externally on the yard's end wall 14, as shown in fig. 1. This section comprises a board plate 19, see fig. 4, which rests on joists, which in turn rest on beams

26. These beams 26 are secured to vertical posts 16 to which a side surface 17 is secured. The plate 17 and the board plate 19 are similarly made of plywood, 12 and 16 mm respectively.

5

Along the side wall there is built a trough with trough sides 17 and 18 and end sections for the formation of a feedstuff channel, which can easily be reached by the pigs when they are standing on the board plate 19. As shown in figs. 1 and 4, the plate 17 leaves an opening 27, thus enabling the trough to be filled with feedstuff from outside. In this manner, the pigs are sheltered from three sides while feeding, and no feedstuff is wasted, in that the whole feeding board can be kept free of earth and herewith the mud which the pigs would otherwise create at the feeding trough.

The end of the perpend 11 is supported by a post 21. The object of this perpend is to be able to bear a not-shown covering, e.g. a tarpaulin, when there is need for a cover over the yard and the feeding area. The washing-out of manure from these two places during wet periods is hereby also avoided.

25

Finally, in fig. 5 is shown an example of a crop rotation, where pigpen units 1, 2, 3 are placed out to and along a road 25 and with the one long side facing the road. Each of the areas 23 are enclosed by a suitable fence 22 in sections of around 200 m² per pig. The concentration of manure can hereby be kept at a suitable level for the subsequent crops.

When the area has been used for one or two growing

seasons, the pigpen unit can be dismantled and moved, for example to the opposite side of the road. Optimum use can thus be made of the crop rotation, in that the pigs effectively clear the soil of all weeds while at the same time fertilizing it. After the rotation, the area can easily be sown with a new crop. When the changeover is made, e.g. every other year, the pigpen units are moved back to the area which has been used for the growing of crops, and the area which has been used by the pigs is sown.

Feeding and supervision can take place from the road, and the pigs can be loaded and transported away through the road door 13. The catching of the pigs is effected easily by closing the field door 13 when the pigs are resting in the piggery, and thus they can be let out quietly and calmly through the road door and transported away.

In practice, therefore, the production of porkers is effected solely by the operation of the two doors 13. The stocking-up with 20-30 piglets is normally effected with the help of a transport container, which is driven out along the road 25 and in through the road door 13 which is thereafter closed.

The field door 13 is similarly held closed for the first few days so that the pigs get accustomed to where they are living. Hereafter, the field door 13 is opened when the pigs want to seek out into the field or for feeding and into the yard and the piggery for the night. If it is desired to catch one or more of the pigs, this is done by closing the field door when the pigs are in the yard, after

which they are easily caught. The pigs are caught in the same manner when they are to be slaughtered, in that the transport container is simply placed on the road and the road door 13 is opened, after which the pigs will walk out into the transport container.

With the pigpen unit according to the invention, there is thus achieved a rational operation under the best possible conditions for the pigs.

10

15

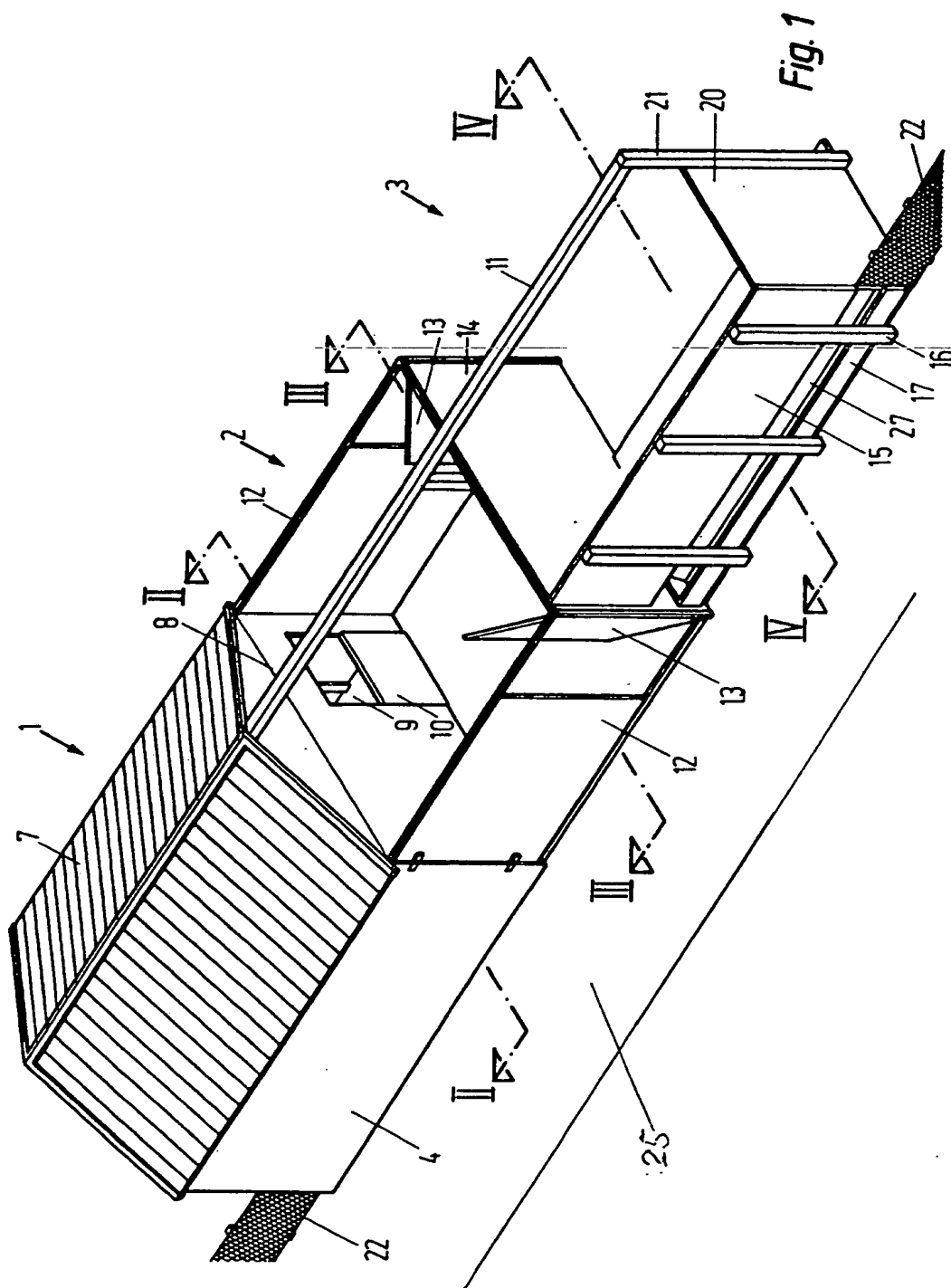
20

25

30

C L A I M S

1. Pigpen unit for siting on a fenced-in field area,
and comprising a piggery with an access opening,
5 c h a r a c t e r i z e d in that the piggery is
without a floor and that the opening (10) faces out
to a closed and possibly covered yard (2) without a
floor and in extension of the piggery (1), said yard
being provided with a door (13) out to the field
10 (23), and with a feeding board (3) with trough (17,
18) placed on the external side of the yard (2).
2. Pigpen unit according to claim 1, c h a r -
a c t e r i z e d in that the piggery (1), the yard
15 (2) and the feeding board (3) are arranged in ex-
tension of one another in the formation of a unit
with straight side walls (4, 12, 15).
3. Pigpen unit according to claims 1 and 2,
20 c h a r a c t e r i z e d in that the yard (2) is
further provided with a door (13), and the feeding
board (3) with an opening (27) to the trough (17,
18), said door (13) and opening (27) being config-
ured in the straight side wall (12, 15).
25
4. Pigpen unit according to claims 2 and 3,
c h a r a c t e r i z e d in that the piggery (1),
the yard (2) and the feeding board (3) are assembled
by means of brackets in such a manner that the parts
30 can be separated or folded together.
5. Pigpen unit according to claims 1-4, c h a r -
a c t e r i z e d in that it is placed with the
straight side wall (4,12,15) facing out to a road (25).



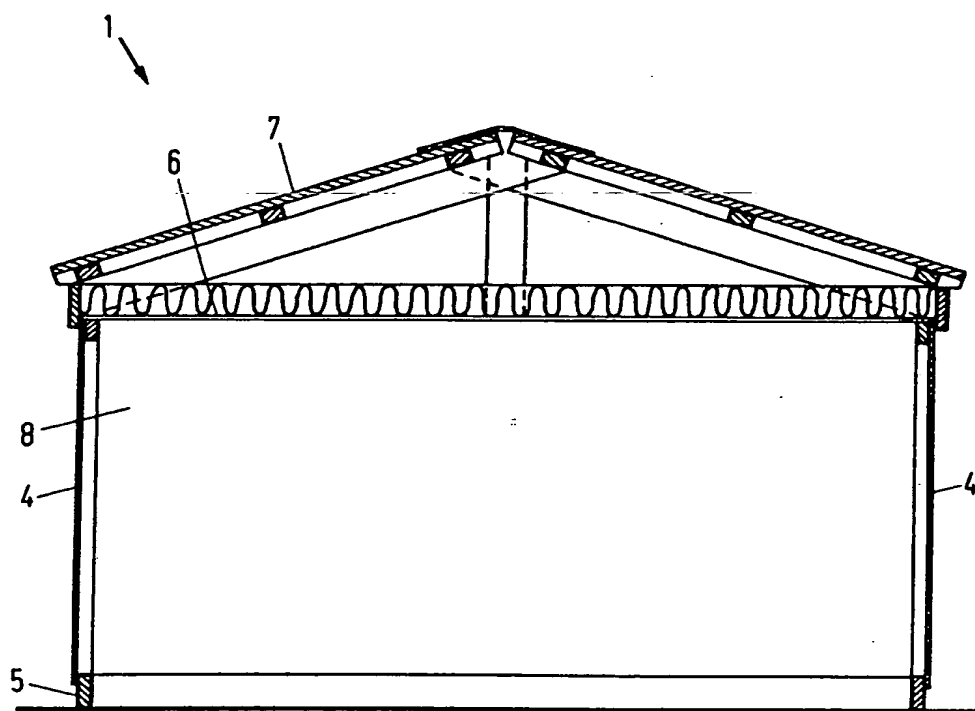


Fig. 2

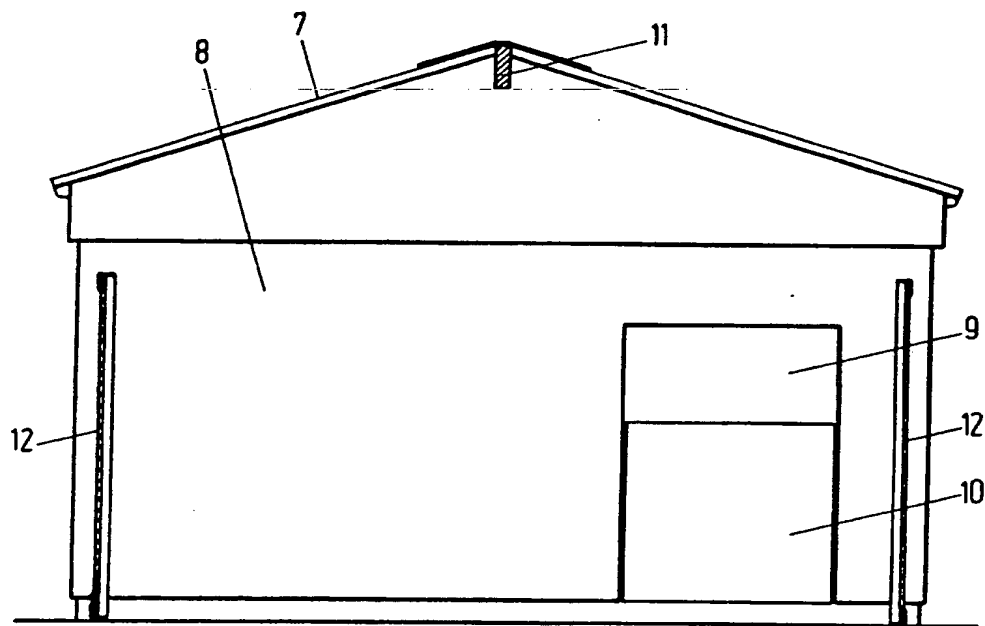


Fig. 3

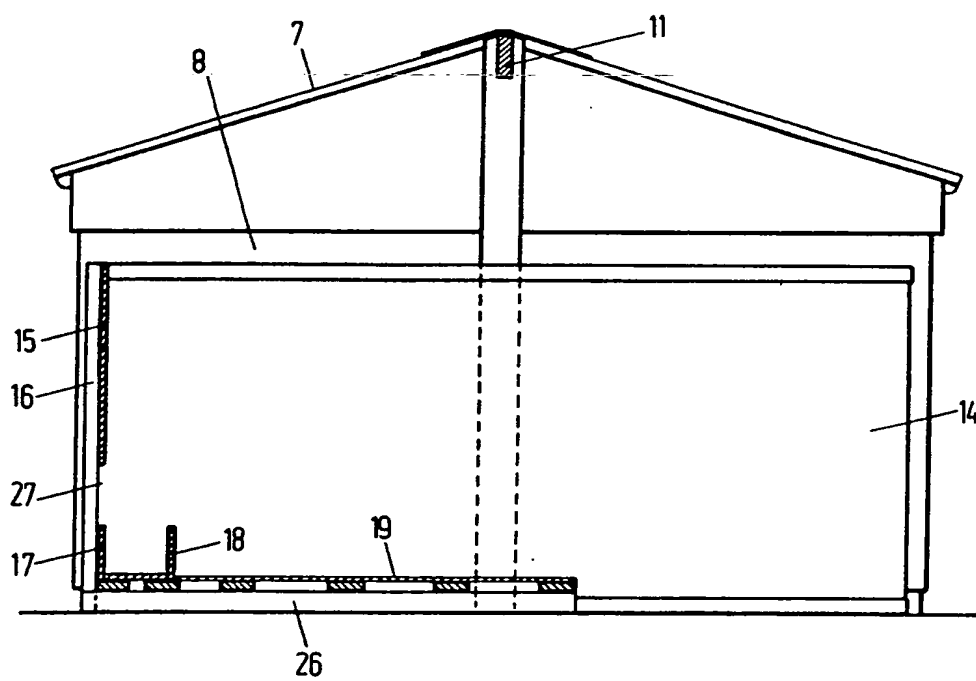
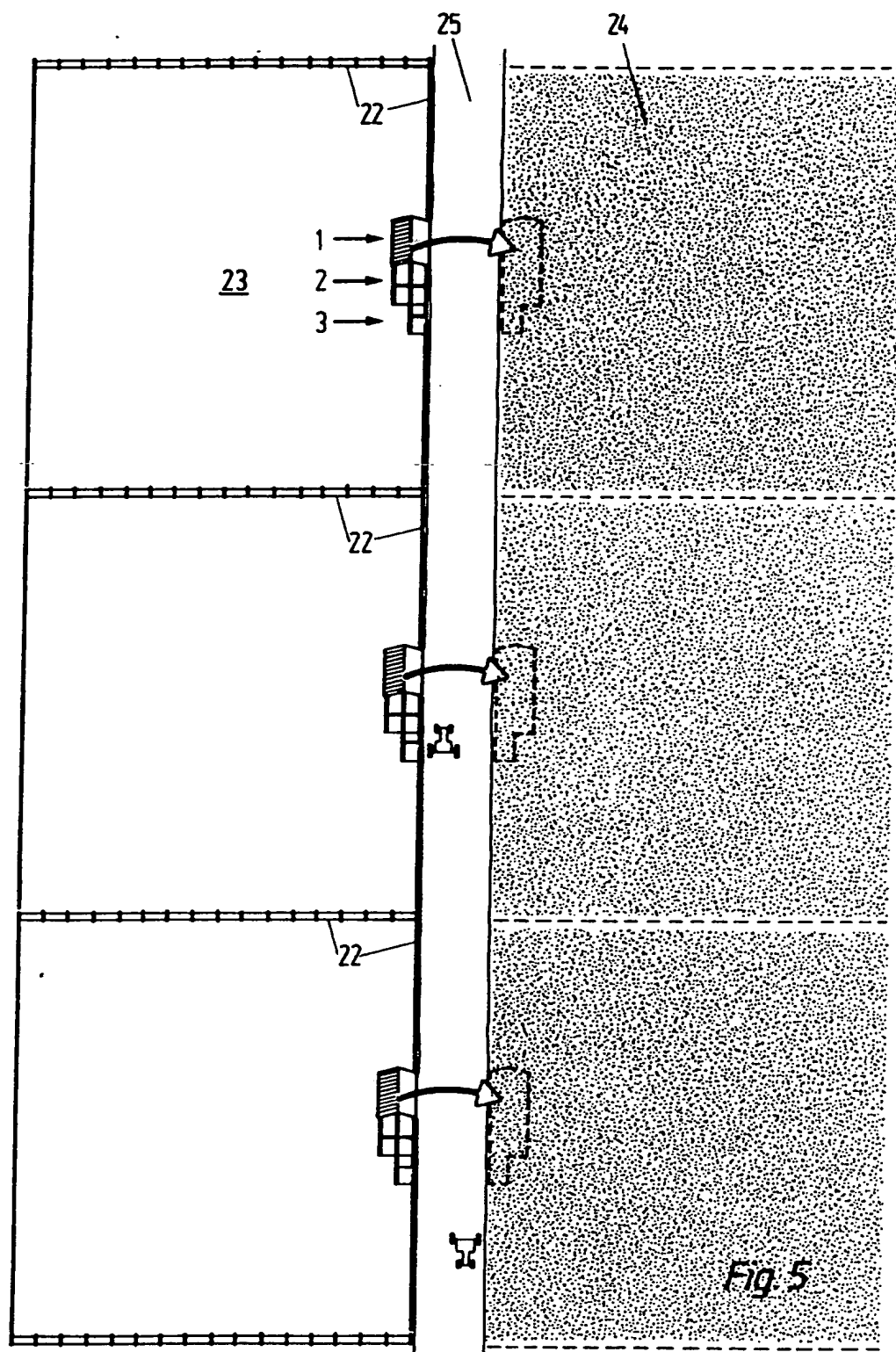





Fig. 4

5/5



INTERNATIONAL SEARCH REPORT

International Application No PCT/DK 90/00023

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ⁶ According to International Patent Classification (IPC) or to both National Classification and IPC IPC5: A 01 K 1/02, E 04 H 5/08																	
II. FIELDS SEARCHED <div style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;">Minimum Documentation Searched⁷</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 25%; border-bottom: 1px solid black;">Classification System</th> <th style="border-bottom: 1px solid black;">Classification Symbols</th> </tr> <tr> <td style="padding: 5px;">IPC5</td> <td style="padding: 5px;">A 01 K; E 04 B; E 04 H</td> </tr> </table> <div style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;">Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in Fields Searched⁸</div> <p style="padding: 5px;">SE,DK,FI,NO classes as above</p>			Classification System	Classification Symbols	IPC5	A 01 K; E 04 B; E 04 H											
Classification System	Classification Symbols																
IPC5	A 01 K; E 04 B; E 04 H																
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹ <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%; border-bottom: 1px solid black;">Category[*]</th> <th style="border-bottom: 1px solid black;">Citation of Document,¹¹ with indication, where appropriate, of the relevant passages¹²</th> <th style="width: 10%; border-bottom: 1px solid black;">Relevant to Claim No.¹³</th> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">Y</td> <td style="padding: 5px;">GB, A, 2217567 (DAVID BRITTON) 1 November 1989, see figure 1; claim 1 --</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1,4</td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">Y</td> <td style="padding: 5px;">US, A, 3724424 (BENJAMIN) 3 April 1973, see figure 1; claim 1 --</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1,4</td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">Y</td> <td style="padding: 5px;">US, A, 3256858 (R.A. PALS) 21 June 1966, see column 2, line 33 - line 44; figure 1 --</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1</td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">Y</td> <td style="padding: 5px;">US, A, 3338213 (M.W. REYNOLDS ET AL) 29 August 1967, see column 1, line 51 - line 67; figures 1-3 -- -----</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1</td> </tr> </table>			Category [*]	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³	Y	GB, A, 2217567 (DAVID BRITTON) 1 November 1989, see figure 1; claim 1 --	1,4	Y	US, A, 3724424 (BENJAMIN) 3 April 1973, see figure 1; claim 1 --	1,4	Y	US, A, 3256858 (R.A. PALS) 21 June 1966, see column 2, line 33 - line 44; figure 1 --	1	Y	US, A, 3338213 (M.W. REYNOLDS ET AL) 29 August 1967, see column 1, line 51 - line 67; figures 1-3 -- -----	1
Category [*]	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³															
Y	GB, A, 2217567 (DAVID BRITTON) 1 November 1989, see figure 1; claim 1 --	1,4															
Y	US, A, 3724424 (BENJAMIN) 3 April 1973, see figure 1; claim 1 --	1,4															
Y	US, A, 3256858 (R.A. PALS) 21 June 1966, see column 2, line 33 - line 44; figure 1 --	1															
Y	US, A, 3338213 (M.W. REYNOLDS ET AL) 29 August 1967, see column 1, line 51 - line 67; figures 1-3 -- -----	1															
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>* Special categories of cited documents:¹⁰</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p> </div> </div>																	
IV. CERTIFICATION <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px solid black; padding: 5px;">Date of the Actual Completion of the International Search</td> <td style="width: 50%; border-bottom: 1px solid black; padding: 5px;">Date of Mailing of this International Search Report</td> </tr> <tr> <td style="padding: 5px;">3rd May 1990</td> <td style="text-align: center; padding: 5px;">1990 -05- 07</td> </tr> <tr> <td style="border-bottom: 1px solid black; padding: 5px;">International Searching Authority</td> <td style="border-bottom: 1px solid black; padding: 5px;">Signature of Authorized Officer</td> </tr> <tr> <td style="text-align: center; padding: 5px;">SWEDISH PATENT OFFICE</td> <td style="text-align: center; padding: 5px;">  Catarina Forssen </td> </tr> </table>			Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	3rd May 1990	1990 -05- 07	International Searching Authority	Signature of Authorized Officer	SWEDISH PATENT OFFICE	 Catarina Forssen							
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report																
3rd May 1990	1990 -05- 07																
International Searching Authority	Signature of Authorized Officer																
SWEDISH PATENT OFFICE	 Catarina Forssen																

FURTHER INFORMATION CONTINUED FROM THE SECOND SHEET

V. ☒ OBSERVATIONS WHERE CERTAIN CLAIMS WERE FOUND UNSEARCHABLE¹

This international search report has not been established in respect of certain claims under Article 17(2) (a) for the following reasons:

1. ☒ Claim numbers...5....., because they relate to subject matter not required to be searched by this Authority, namely:

How the house is placed in relation to the environment

2. ☐ Claim numbers....., because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claim numbers....., because they are dependent claims and are not drafted in accordance with the second and third sentences of PCT Rule 6.4(a).

VI. ☐ OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING²

This International Searching Authority found multiple inventions in this international application as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims of the international application.
2. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims of the international application for which fees were paid, specifically claims:
3. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the the claims. It is covered by claim numbers:
4. ☐ As all searchable claims could be searched without effort justifying an additional fee, the International Searching Authority did not invite payment of any additional fee.

Remark on Protest

- ☐ The additional search fees were accompanied by applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.PCT/DK 90/00023**

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the Swedish Patent Office EDP file on **90-03-30**.
The Swedish Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB-A- 2217567	89-11-01	NONE	
US-A- 3724424	73-04-03	NONE	
US-A- 3256858	66-06-21	NONE	
US-A- 3338213	67-08-29	NONE	